

Amendments to the Specification:

Please replace paragraph [0005] of the specification with the following amended paragraph:

5 [0005] Fig.2 is a circuit diagram of the sensing area 14 in Fig.1. The sensing area 14 comprises a plurality of sensing units 16 arranged in matrix. Each of the sensing units 16 is used for sensing the texture of a fingerprint on the corresponding position and comprises a transistor 18 and a detecting capacitor Cf. When the sensing area 14 acts, the source S of the transistor 18 is given a detecting signal Vs1 or Vs2. When the user fingers the surface of the sensing area 14, the capacitance of the detecting capacitor Cf is changed. As the capacitance of the detecting capacitor Cf is changed, the gate voltage of the transistor 18 is also changed with capacitive coupling effect.

10 The variation ΔV_g of the gate voltage of the transistor 18 is decided by the capacitance of the detecting capacitor Cf and is showed as:

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Please replace paragraph [0010] of the specification with the following amended paragraph:

20 [0010] The variation ΔV_g of the gate voltage of the transistor 18 directly influences the electric current I which flows through the transistor 18. The detecting and processing circuit 12 identifies the fingerprint in accordance with the variation of electric current I. However, detecting the variation of electric current I to identify the user's fingerprint is usually interfered with by the leakage current of the adjacent transistor 18 and limits the accuracy.

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30 **Please replace paragraph [0012] of the specification with the following amended paragraph:**

[0012] According to the claimed invention, a fingerprint sensor includes a detecting and processing circuit and a plurality of sensing units. Each of the sensing units has a switch element, a first resistor, and a second resistor. The switch element includes a first terminal, a second terminal, and a third terminal. The first terminal is connected to a switch terminal, the third terminal is connected to the detecting and processing circuit, and the switch element is turned on/off by the switch terminal. The first resistor has a first terminal connected to the second terminal of the switch element, and a fingerprint influences an intensity of light illuminating the first resistor so that resistance of the first resistor and a voltage level of the second terminal of the switch element are changed. The second resistor has a first terminal connected to the second terminal of the switch element and the resistance of the second resistor is fixed. When the switch elements are turned on, the detecting and processing circuit analyzes the fingerprint according to the voltage levels of the second terminals of the plurality switch elements.

Please replace paragraph [0027] of the specification with the following amended paragraph:

[0027] Compared to the conventional capacitive fingerprint sensor, the resistive fingerprint sensor comprises a detecting and processing circuit and a plurality of sensing units. Each of the sensing units comprises a switch element, a variable_resistor, and a fixed_resistor. The resistance of the_variable_resistor is influenced by_an intensity of light illuminating the variable resistor_and changes the output voltage of the switch element. The detecting and processing circuit senses an arrangement of texture of the fingerprint by detecting the output voltage. Additionally, the resistive fingerprint sensor of present invention senses the fingerprint by detecting the output voltage so the problem of being influenced by leakage current is

overcome. The sensitivity and accuracy of the resistive fingerprint sensor is greater than that of capacitive fingerprint sensor.